

(PCT Article 36 and Rule 70)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/017408

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-21 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 2, 5-15 as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1, 3, 4 received by this Authority on 11.07.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets fig. 1-14 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/017408

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-15	YES
	Claims		NO
Inventive step (IS)	Claims	8, 9, 11	YES
	Claims	1-7, 10, 12-15	NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
<p>Document 1: Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 30619/1989 (Laid-open No. 120797/1990) (Kitashiba Electric Co., Ltd.), 28 September 1990</p> <p>Document 2: JP 2003-17221 A (Ricoh Co., Ltd.), 17 January 2003</p> <p>Document 3: JP 2001-188430 A (Matsushita Electric Industrial Co., Ltd.), 10 July 2001</p> <p>Document 4: JP 8-16006 A (Canon Inc.), 19 January 1996</p> <p>Document 5: JP 2003-91186 A (Fuji Xerox Co., Ltd.), 28 March 2003</p> <p>The inventions set forth in claims 1, 6, 7, 10, 12, 14 and 15 do not involve an inventive step in the light of the inventions disclosed in documents 1 and 2 cited in the international search report. Document 2 discloses a heating device for use in an affixing device, said heating device being equipped with: an excitation coil, which has a plurality of conductors wound thereupon; a heat generating member with a rotating member that moves relative to the aforementioned excitation coil, which is heated via electromagnetic induction from the action of</p>			

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International application No.

PCT/JP2004/017408

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
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the magnetic field that is generated by the aforementioned excitation coil; and a thermostat, which detects when the aforementioned heat generating member reaches an abnormally high temperature. Therein, the conductors of the aforementioned excitation coil are wound parallel the axial direction of the aforementioned rotating member and arranged so as to face the peripheral surface of the aforementioned rotating member, while the aforementioned thermostat is disposed on the same side of the aforementioned heat generating member as the aforementioned excitation coil and is positioned at the center of the windings of the aforementioned excitation coil. Meanwhile, document 1 indicates that the temperature detection means is disposed between the winding bundles of the excitation coil. Such being the case, it would have been easy for a person skilled in the art to configure the inventions set forth in claims 1, 6, 7, 10, 12, 14 and 15 by disposing the thermostat from the invention disclosed in document 2 between the winding bundles of the excitation coil, like in the invention disclosed in document 1. Furthermore, the fact that it is necessary to prevent the temperature detection means of an induction heater from generating heat itself and the fact that it is necessary to decrease the effects of magnetic fluxes are well known.

The invention set forth in claim 2 does not involve an inventive step in the light of the inventions disclosed in documents 1 and 2, and document 3 cited in the international search report. Document 3 discloses a heating device equipped with a center core, which is configured from a ferromagnetic member that is disposed at the center of the windings of the excitation coil, and

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International application No.

PCT/JP2004/017408

Box No. V

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side cores, which are configured from ferromagnetic members that are disposed on the outsides of the winding bundles of the aforementioned excitation coil. Such being the case, it would have been easy for a person skilled in the art to configure the invention set forth in claim 2 by applying a center core and side cores like those disclosed in document 3 and applying the technical feature disclosed in document 1, wherein the temperature detection means is disposed between the winding bundles of the excitation coil, in the invention disclosed in document 2.

The inventions set forth in claims 3, 4 and 13 do not involve an inventive step in the light of the inventions disclosed in documents 2 and 3, and document 4 cited in the international search report. Document 4 discloses a heating device wherein the means for detecting abnormal temperatures is sandwiched between the core and the excitation coil by means of the side parts of the winding bundles of the excitation coil. Furthermore, a person skilled in the art could reposition the center core to a location outside the center of the windings of the excitation coil, as appropriate. Such being the case, it would have been easy for a person skilled in the art to configure the inventions set forth in claims 3, 4 and 13 in the light of the inventions disclosed in documents 2 to 4.

The invention set forth in claim 5 does not involve an inventive step in the light of the inventions disclosed in documents 1 and 2, and document 5 cited in the international search report. Document 5 discloses a heating device equipped with an opposed core for forming a magnetic path, which is disposed on the opposite side

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PCT/JP2004/017408

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
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of the heat generating member from the excitation core.
Such being the case, it would have been easy for a person skilled in the art to configure the invention set forth in claim 5 in the light of the inventions disclosed in documents 1, 2 and 5.

The inventions set forth in claims 8, 9 and 11 are not disclosed in any of the documents that are cited in the international search report, and would not have been obvious to a person skilled in the art.